

Claims

1. A reactor for a cooling installation (1) for performing an adsorption and desorption process,
5 especially with zeolite (27) as adsorbent and with water as adsorbate, the interior (21) of a vacuum-tight housing (17) being connectable to a vacuum generator (9) and to a vessel (6) containing water, and having a heating device (28) and a sealable outlet opening for
10 water vapor, **wherein**

at least one inner vessel (22) containing the zeolite (27) is provided and has a vessel wall (23), which is permeable to air and water vapor and that

15 at least one heating device (28) is arranged in the interior (25) of the inner vessel (22).

2. The reactor as claimed in claim 1, **wherein**

multiple inner vessels (22) each with air and water vapor-permeable vessel wall (23) are arranged in the housing (17).

20 3. The reactor as claimed in claim 1, **wherein**

the length (L) of the inner vessel (22) is very large in relation to the dimensions of its cross section.

4. The reactor as claimed in claim 1, **wherein**

25 the inner vessel (22) is cylindrical.

5. The reactor as claimed in claim 1, **wherein**
the inner vessel (22) is rod-shaped.

6. The reactor as claimed in claim 1, **wherein**

30 the cross section of the inner vessel (22) is polygonal.

7. The reactor as claimed in claim 1, **wherein**

the vessel wall (23) is composed of a wire mesh (24).

8. The reactor as claimed in claim 1, **wherein**

35 a heating element (29) is provided as heating device (28) and is arranged along the axis (30) of the inner vessel (22).

9. The reactor as claimed in claim 1, **wherein**

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the heating element (29) is an electrical heating element.

10. The reactor as claimed in claim 1, **wherein**

5 the heating element (29) is a heating tube for a hot liquid/heating oil and is arranged along the axis (30) of the inner vessel (22).

11. The reactor as claimed in claim 1, **wherein**

10 the heat-conducting elements (31), (40) are arranged in the packing (26) composed of zeolite (27) and are connected to the heating device (28).

12. The reactor as claimed in claim 1, **wherein**

the heat-conducting elements (31) are fin or disk-shaped.

13. The reactor as claimed in claim 1, **wherein**

15 the heating conducting element is a copper wire mesh.

14. The reactor as claimed in claim 1, **wherein**

20 a metal network is provided as heat-conducting element, which surrounds the heating element (29), and that the zeolite (27) is to a large extent positively embedded in the metal network.

15. The reactor as claimed in claim 1, **wherein**

25 the arrangement of the heating elements (29)/heating tubes for the hot liquid/heating oil is rotationally symmetrical.

16. The reactor as claimed in claim 1, **wherein**

lines (10, 11) and (12, 13) are arranged at one end face (35) of the housing (17) as feed line or return line respectively for hot liquid/heating oil.